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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,833	01/20/2006	Maurizio Galimberti	07040.0227-00000	6471
22852 7590 08/20/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER FISCHER, JUSTIN R	
			ART UNIT 1733	PAPER NUMBER
			MAIL DATE 08/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,833	Applicant(s) GALIMBERTI ET AL.	
	Examiner Justin R. Fischer	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49-98 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49-98 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 49-54, 62-69, 74-85, 88, 89, 91, and 94-98 are rejected under 35 U.S.C. 102(b) as being anticipated by Larson (EP 1193085, of record). Larson is directed to a pneumatic tire construction comprising a belt structure (rubber/cord laminate), wherein said belt structure comprises an inorganic material in the form of a clay (e.g. smectite clay). In this instance, Larson suggests the inclusion of intercalated organoclays (in rubber/cord laminates, such as belt plies) that are at least partially exfoliated in situ, wherein the exfoliated platelets have a thickness of about 1 nanometer and the particles of the stacked platelets have a thickness between 10 and 40 nanometers.

With respect to claims 51, 52, 84, and 85, a portion of the intercalated organoclays are exfoliated, such that both intercalated clays and exfoliated portions are present.

Regarding claims 53, 54, 88, and 89, the increase in d-spacing appears to be a direct result of incorporating said inorganic material in an elastomeric composition. Applicant has not identified any specific processing means that results in the claimed increase and as such, one of ordinary skill in the art at the time of the invention would

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have expected the belt layers of Tanaka in view of Larson to demonstrate the claimed increase in d-spacing.

With respect to claims 62 and 63, Larson describes the inclusion of said inorganic material at a loading between 30 and 100 phr.

As to claims 64-67 and 91, Larson suggests the preferred inclusion of smectite clay, such as montmorillonite clay.

Regarding claims 68 and 69, the inorganic material/clay of Larson is treated with a quaternary ammonium salt.

As to claims 74-77, 81, 94, and 98, the rubber compositions of Larson include conventional silane coupling agents.

With respect to claims 78-80 and 85-97, Larson recognizes the manufacture of rubber/cord laminates, such as belt layers, comprising carbon back, silica, and clays.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 56, 58-61, 70-73, 86, 87, 92, and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson.

With respect to claim 56, Larson describes the manufacture of rubber/cord laminates, such as belt layers. While the reference fails to expressly disclose a belt arrangement, the claimed arrangement comprising crossed belt layers represents the

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conventional form of belt structures- one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire of Larson with a conventional belt arrangement.

As to claims 58 and 59, Larson additionally suggests the manufacture of a sidewall insert and/or a bead apex. It is well known to extend the respective tire components into the tire crown region to provide additional reinforcement over the sidewall and shoulder regions. In such instances, the tire components would be "associated" with the belt structure and be positioned either between the carcass and the belt or the belt and the tread.

Regarding claims 60, 61, 86, and 87, the claimed values are consistent with the dimensions of conventional tire belt layers.

As to claims 70-73, 92, and 93, the claimed elastomers represent the well known conventional elastomers used in the tire industry, as shown for example by Larson. It is emphasized that each of the claimed elastomers is extensively used in a wide variety of tire components, including the belt structure. Lastly, the claimed elastomers are recognized as having a glass transition temperature in accordance to the claimed invention.

5. Claims 49-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP 01109107) and further in view of Larson (US 6,598,645). Tanaka is directed to a motorcycle tire construction comprising a carcass structure 5, a belt structure 6-9, a tread band 1, a pair of sidewalls 2, and a pair of bead wires/cores 4. In

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this instance, Tanaka fails to include an elastomeric material that is “associated” with said belt structure and comprises at least one layered inorganic material comprising an individual layer thickness from 0.01 to 30 nanometers. However, it is well known to include inorganic materials to improve the reinforcement of a given elastomeric composition, as shown for example by Larson. In this instance, Larson suggests the inclusion of intercalated organoclays (in rubber/cord laminates, such as belt plies) that are at least partially exfoliated in situ, wherein the exfoliated platelets have a thickness of about 1 nanometer and the particles of the stacked platelets have a thickness between 10 and 40 nanometers (Abstract, Column 2, Lines 25-35, and Column 4, Lines 55-67). As such, one of ordinary skill in the art at the time of the invention would have found it obvious to include such an inorganic reinforcement in the belt construction of Tanaka (such a construction includes a belt structure associated with the claimed inorganic material).

With respect to claims 51, 52, 84, and 85, a portion of the intercalated organoclays are exfoliated, such that both intercalated clays and exfoliated portions are present.

Regarding claims 53, 54, 88, and 89, the increase in d-spacing appears to be a direct result of incorporating said inorganic material in an elastomeric composition. Applicant has not identified any specific processing means that results in the claimed increase and as such, one of ordinary skill in the art at the time of the invention would have expected the belt layers of Tanaka in view of Larson to demonstrate the claimed increase in d-spacing.

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As to claims 55-57 and 90, Figure 1 of Tanaka clearly depicts a pair of crossed belt layers 6,7 and a radially outermost, circumferential belt layer 9 (inorganic materials can be included in any belt layer, including zero degree layer).

Regarding claims 60, 61, 86, and 87, the claimed values are consistent with the dimensions of conventional tire belt layers.

With respect to claims 62 and 63, Larson describes the inclusion of said inorganic material at a loading between 30 and 100 phr (Column 4, Lines 5-10).

As to claims 64-67 and 91, Larson suggests the preferred inclusion of smectite clay, such as montmorillonite clay (Column 2, Lines 45-55).

Regarding claims 68 and 69, the inorganic material/clay of Larson is treated with a quaternary ammonium salt (Column 2, Lines 49-52).

With respect to claims 70-73, 92, and 93, the claimed elastomers represent the well known conventional elastomers used in the tire industry, as shown for example by Larson (Column 6, Lines 30-50). It is emphasized that each of the claimed elastomers is extensively used in a wide variety of tire components, including the belt structure. Lastly, the claimed elastomers are recognized as having a glass transition temperature in accordance to the claimed invention.

As to claims 74-77, 81, 94, and 98, silane coupling agents are conventionally used in tire rubber compositions to “couple” or connect silica to a base elastomer component, which ultimately improves the properties of a given tire component. Larson provides one example of such a composition (Column 7, Lines 25-30).

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With respect to claims 78-80 and 85-97, tire compositions are generally described as including a plurality of reinforcing fillers, such as carbon black, silica, and/or clay materials. In this instance, Larson recognizes the manufacture of rubber/cord laminates, such as belt layers, comprising each of the aforementioned reinforcing fillers (Column 6, Lines 50-60).

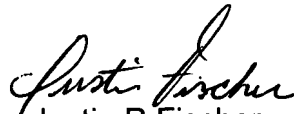
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin R. Fischer whose telephone number is (571) 272-1215. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Justin R Fischer
Primary Examiner
Art Unit 1733

JRF
August 13, 2007